

IN THE DRAWINGS:

Please substitute the enclosed corrected sheet 2/6 of formal drawings, including Fig. 2 and identified in the upper right corner as "Replacement Sheet," for the sheet 2/6 of the formal drawings currently on file. The figure has been corrected to show the actuators and an electronic controller, as previously required by the Examiner, and to show connection of the electronic controller 99 with the bypass valve 118.

REMARKS

By the foregoing amendment, the specification has been amended to include reference numbers for the actuators and the electronic controller in Fig. 2, the claimed species, and Fig. 2 has been amended to show the actuators and the electronic controller, and to show connection of the electronic controller 99 with the bypass valve 118, support for which can be found in the specification at page 7, lines 5-8. Claims 1 and 31 have been amended. Claims 1-4, 15, 16, 26, and 29-31 are pending. Favorable reconsideration of the application is respectfully requested.

Claims 1-4, 15, 16, 26, 29 and 30 were rejected under 35 U.S.C. § 112, *second paragraph*, as being incomplete for omitting essential elements, with reference to MPEP § 2172.01. The Examiner indicated that the omitted elements were 1) an actuator mechanism/means which opens and closes the exhaust valves; 2) an electronic controller which receives changes in engine speed as inputs and controls the actuator mechanism/means to open and close the exhaust/inlet valves; and 3) an engine speed sensor/detector for sensing/detecting the changes in engine speed and functioning as inputs/input signals connecting to the electronic controller.

The Examiner indicated that without the structural connectivity of the electronic controller, an engine speed sensor/detector and the exhaust/inlet valves, the exhaust/inlet valves do not perform their functions of opening/closing, or adjusting, or restricting, or varying the flow rate of the exhaust gas to be delivered into the first exhaust duct or the second exhaust duct with respect to changes in engine speed. Claim 1 has been amended to recite "actuator means for opening and closing the exhaust valve means" and "an electronic controller configured to control operation of the actuator means to thereby control opening and closing of the exhaust valve means," as previously recited in Claim 31, as to which the Examiner did not raise this particular rejection.

Claim 1 has also been amended to delete the phrase "with changes in engine speed." As recited in Claim 1, the proportion of the flow of exhaust gas which flows through the first exhaust duct relative to the second exhaust duct is varied by variation of opening and closing of the first exhaust valve, so that the exhaust/inlet valves perform their functions according to the structure and interconnectivity recited in Claim 1 without regard to existence or interconnectivity of an engine speed sensor/detector for sensing/detecting the changes in engine speed and

functioning as inputs/input signals connecting to the electronic controller, as suggested by the Examiner. It is respectfully submitted that the technology of tachometers for detecting changes in engine speed is well known in the art, so that it is not essential to an understanding of the invention. According to MPEP § 2172.01, "a claim which fails to interrelate essential elements of the invention as defined by applicant(s) in the specification may be rejected under 35 U.S.C. 112, second paragraph, for failure to point out and distinctly claim the invention." An engine speed sensor/detector for sensing/detecting the changes in engine speed and functioning as inputs/input signals connecting to the electronic controller has not been defined as essential in the specification, and has not been described at all in the specification. It is therefore respectfully submitted that the rejection of Claims 1-4, 15, 16, 26, 29 and 30 under 35 U.S.C. § 112, second paragraph, should be withdrawn.

Claim 31 was rejected under 35 U.S.C. § 112, *second paragraph*, as being incomplete for omitting essential elements, with reference to MPEP § 2172.01. The Examiner indicated that the omitted elements were an engine speed sensor/detector for sensing/detecting the changes in engine speed and functioning as inputs/input signals connecting to the electronic controller. The Examiner indicated that without the structural connectivity of the electronic controller, an engine speed sensor/detector, and the bypass valve bypassing the compressor means, the bypass valve does not perform its functions of opening/closing, or adjusting, or restricting, or varying the flow rate of the compressed air with respect to changes in engine speed. Claim 31 has been amended to delete the phrases "with changes in engine speed," and "the proportion being varied with changes in engine speed." As recited in Claim 31, the proportion of the flow of exhaust gas which flows through the first exhaust duct relative to the second exhaust duct is varied by variation of opening and closing of the first exhaust valve.

As is described in the specification at page 7, lines 4-8, the bypass valve 118 is controlled by the electronic controller, as is now shown in Fig. 2, and operation of the bypass valve 118 enables the electronic controller to control how much of the intake air passes through the high pressure turbocharger 105. Claim 31 recites that the compressor means includes a bypass passage having a bypass valve controlled by the electronic controller, so that the bypass valve performs its functions of opening/closing, or adjusting, or restricting, or varying the flow rate of the compressed air under control of the electronic controller, according to the structure and interconnectivity recited in Claim 31 without regard to existence or interconnectivity of an

engine speed sensor/detector for sensing/detecting the changes in engine speed and functioning as inputs/input signals connecting to the electronic controller, as suggested by the Examiner. It is respectfully submitted that the technology of tachometers for detecting changes in engine speed is well known in the art, so that it is not essential to an understanding of the invention. According to MPEP § 2172.01, "a claim which fails to interrelate essential elements of the invention as defined by applicant(s) in the specification may be rejected under 35 U.S.C. 112, second paragraph, for failure to point out and distinctly claim the invention." An engine speed sensor/detector for sensing/detecting the changes in engine speed and functioning as inputs/input signals connecting to the electronic controller has not been defined as essential in the specification, and has not been described at all in the specification. It is therefore respectfully submitted that the rejection of Claim 31 under 35 U.S.C. § 112, second paragraph, should be withdrawn.

Claims 1-3 and 15 were rejected under 35 U.S.C. §103(a) on the grounds of obviousness from Yamane (JP 61-164039 A), in view of Santo (JP 01-285619 A). The Examiner acknowledged that Yamane fails to disclose opening and closing of a first exhaust valve and opening and closing of a second exhaust valve controlling a proportion of flow of exhaust gas which flows through a first exhaust duct to a first turbocharger relative to a second exhaust duct being varied by variation of opening and closing of the first exhaust valve with changes in engine speed.

Santo was cited as teaching that it is conventional to utilize the opening and closing of a first exhaust valve (5) and the opening and closing of a second exhaust valve (4) controlling the proportion of flow of exhaust gas which flows through a first exhaust duct (9) to a first turbocharger (12) relative to a second exhaust duct (8), being varied by variation of opening and closing of the first exhaust valve (5) with changes in engine speed.

Claim 1 has been amended to recite "said electronic controller being operative to control timing of operation of said actuator means to control timing of opening and closing of said first exhaust valve and to control timing of opening and closing of said second exhaust valve," and "wherein said timing of opening and closing of the first exhaust valve and said timing of opening and closing of the second exhaust valve controls the proportion of the flow of exhaust gas which flows through the first exhaust duct to the first turbocharger relative to the second exhaust duct,

and the proportion of the flow of exhaust gas which flows through the first exhaust duct relative to the second exhaust duct being varied by variation of said timing of opening and closing of the first exhaust valve." Support for the amendment can be found in the specification at page 8, lines 13-18. It is respectfully submitted that there is no evidence or suggestion in the combination of Yamane and Santo of electronic control of timing of opening and closing of first and second exhaust valves to control the proportion of flow of exhaust gas through a first exhaust duct to a first turbocharger relative to a second exhaust duct, and the proportion of the flow of exhaust gas through the first exhaust duct relative to the second exhaust duct being varied by variation of the timing of opening and closing of the first exhaust valve, as is claimed. It is therefore respectfully submitted that Claims 1-3 and 15 patentably distinguish the combination of Yamane and Santo, and that the rejection of Claims 1-3 and 15 on the grounds of obviousness from Yamane in view of Santo should be withdrawn.

Claims 4, 26 and 29 were rejected under 35 U.S.C. §103(a) on the grounds of obviousness from Yamane in view of Santo, and further in view of Hirabayashi. Hirabayashi was cited as disclosing the use of a bypass passage. Claims 4, 26 and 29 depend from Claim 1, discussed above. It is respectfully submitted that there is no evidence or suggestion in the combination of Yamane, Santo and Hirabayashi of electronic control of timing of opening and closing of first and second exhaust valves to control the proportion of flow of exhaust gas through a first exhaust duct to a first turbocharger relative to a second exhaust duct, and the proportion of the flow of exhaust gas through the first exhaust duct relative to the second exhaust duct being varied by variation of the timing of opening and closing of the first exhaust valve, as is claimed. It is therefore respectfully submitted that Claims 4, 26 and 29 patentably distinguish the combination of Yamane, Santo and Hirabayashi, and that the rejection of Claims 4, 26 and 29 on the grounds of obviousness from Yamane in view of Santo, and further in view of Hirabayashi should be withdrawn.

Claim 16 was rejected under 35 U.S.C. §103(a) on the grounds of obviousness from Yamane in view of Santo, and further in view of either Lovell or Gray. Lovell and Gray were cited as disclosing closing of exhaust valve means during the upstroke of the piston in order to trap combusted gases in the combustion chamber, and the trapped combusted gases forming a mixture with the fuel and air and serving to delay ignition of the fuel and air mixture when the engine is operating in a first combustion mode with homogenous charge compression ignition.

Claim 16 depends from Claim 1, discussed above. It is respectfully submitted that there is no evidence or suggestion in the combination of Yamane, Santo, Lovell and Gray of electronic control of timing of opening and closing of first and second exhaust valves to control the proportion of flow of exhaust gas through a first exhaust duct to a first turbocharger relative to a second exhaust duct, and the proportion of the flow of exhaust gas through the first exhaust duct relative to the second exhaust duct being varied by variation of the timing of opening and closing of the first exhaust valve, as is claimed. It is therefore respectfully submitted that Claim 16 patentably distinguishes the combination of Yamane, Santo, Lovell and Gray, and that the rejection of Claim 16 on the grounds of obviousness from Yamane in view of Santo, and further in view of either Lovell or Gray should be withdrawn.

Claim 30 was rejected under 35 U.S.C. §103(a) on the grounds of obviousness from Yamane in view of Santo and Hirabayashi and further in view of either Lovell or Gray. Claim 30 depends from Claim 1, discussed above. It is respectfully submitted that there is no evidence or suggestion in the combination of Yamane, Santo, Hirabayashi, Lovell and Gray of electronic control of timing of opening and closing of first and second exhaust valves to control the proportion of flow of exhaust gas through a first exhaust duct to a first turbocharger relative to a second exhaust duct, and the proportion of the flow of exhaust gas through the first exhaust duct relative to the second exhaust duct being varied by variation of the timing of opening and closing of the first exhaust valve, as is claimed. It is therefore respectfully submitted that Claim 30 patentably distinguishes the combination of Yamane, Santo, Hirabayashi, Lovell and Gray, and that the rejection of Claim 30 on the grounds of obviousness from Yamane in view of Santo and Hirabayashi, and further in view of either Lovell or Gray, should be withdrawn.

Claim 31 was rejected under 35 U.S.C. §103(a) on the grounds of obviousness from Yamane in view of Santo, and further in view of Baker (U.S. Patent 5,199,261), which was cited as disclosing that it is conventional to utilize a bypass valve controlled by an electronic controller, the bypass valve controlling the proportion of compressed air from a second turbocharger, the proportion being varied with changes in engine speed. Claim 31 has been amended to recite "timing of operation of said actuator means being controlled by the electronic controller to control timing of opening and closing of said first exhaust valve and to control timing of opening and closing of said second exhaust valve," and "wherein said timing of opening and closing of the first exhaust valve and said timing of opening and closing of the

second exhaust valve controls the proportion of the flow of exhaust gas which flows through the first exhaust duct to the first turbocharger relative to the second exhaust duct, and the proportion of the flow of exhaust gas which flows through the first exhaust duct relative to the second exhaust duct being varied by variation of said timing of opening and closing of the first exhaust valve." Support for the amendment can be found in the specification at page 8, lines 13-18. It is respectfully submitted that there is no evidence or suggestion in the combination of Yamane, Santo and Baker of electronic control of timing of opening and closing of first and second exhaust valves to control the proportion of flow of exhaust gas through a first exhaust duct to a first turbocharger relative to a second exhaust duct, and the proportion of the flow of exhaust gas through the first exhaust duct relative to the second exhaust duct being varied by variation of the timing of opening and closing of the first exhaust valve, as is claimed, and as is discussed above. It is therefore respectfully submitted that Claim 31 patentably distinguishes the combination of Yamane, Santo and Baker, and that the rejection of Claim 31 on the grounds of obviousness from Yamane in view of Santo, and further in view of Baker, should be withdrawn.

In light of the foregoing amendments and remarks, it is respectfully submitted that the application is now in condition for allowance, and an early favorable action in this regard is respectfully requested.

The commissioner is authorized to charge any deficiencies in fees or credit any overpayments to our Deposit Account No. 06-2425.

Respectfully submitted,

FULWIDER PATTON LLP

By: /james w. paul/.
James W. Paul
Reg. No. 29,967

JWP/jb/vbd

Encl: Replacement sheet 2/6 of formal drawings

Howard Hughes Center
6060 Center Drive, Tenth Floor
Los Angeles, CA 90045
Telephone: (310) 824-5555
Facsimile: (310) 824-9696
Customer No. 24201